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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,236	09/09/2003	Toru Kawasaki	8001-1171	8844

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EXAMINER

HU, SHOUXIANG

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10,657,236

Applicant(s)

KAWASAKI, TORU

Examiner

Shouxiang Hu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 4, 6, 7, 14-16, 20, 25, 28 and 29 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 8-13, 17-19, 21-24, 26 and 27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Claims 4, 6, 7, 14-16, 20, 25, 28 and 29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on August 6, 2004.

Accordingly, claims 1-29 are pending in this application; and claims 1-3, 5, 8-13, 17-19, 21-24, 26 and 27 remain active in this office action.

Claim Objections

2. Claims 1-3 and 5 are objected to because of numerous informalities and/or defects, including but not limited to the following:

In claim 1, the term of "each element being" should reads: -each of said photoelectric conversion elements being--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 5, 8-13, 17-19, 21-24, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA (applicant's admitted prior art) in view of JP'060 (JP 2000-196060).

AAPA discloses a solid state image sensor (Figs. 1-5 in the instant disclosure) comprising: a semiconductor substrate (801) having an imaging area (see Fig. 4A and 4B) and a peripheral area (see Fig. 4C) that naturally surrounds the imaging area; a field isolation dielectric (852); photoelectric conversion elements (see Fig. 4A); a charge transfer section (See Fig. 4B) having a plurality of elongated shift register electrodes (828 and/or 830) that are further extended over the field isolation dielectric and formed from a single conductive layer; an insulating film (the vertical portion of film 806 in the gaps between neighboring electrodes 828 in Fig. 4B or 830 in Fig. 4C); and an interlayer insulation film (the entire portion of film 806 covering the imaging area in Fig. 4A, and the horizontal portions of film 806 in Figs. 4B and 4C) covering the elongated portion of the shift register electrodes in the peripheral area, and also covering the gaps between the electrodes, wherein the portion of the interlayer insulation film that is formed on the photoelectric conversion elements is lower than the electrodes 822 shown in Fig. 4A.

Although AAPA does not expressly disclose that the insulating film and the interlayer insulation film can be formed as two layers, one of ordinary skill in the art would readily recognize that they can be desirably formed as two layers by forming the insulating film first, so as to fully fill the gaps between the electrodes and to form planarized top surface before forming the interlayer insulation film for better inter-

electrode insulation and for better process/quality control for the patterned films formed later thereon, as readily evidenced in the prior art such as JP'060 (see Figs. 2-3, showing the insulting film 215 and the interlayer insulation film 216; also see US 6,580,105 for English translation).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporated the two-layer insulation structure of JP'060 into the device of AAPA, so that an imager device with inter-electrode insulation and/or better process/quality control for the patterned films formed on the interlayer would be obtained.

Response to Arguments

Applicant's arguments filed on 01-31-2005 have been fully considered but they are not persuasive.

Applicant's main arguments include: AAPA and/or JP'060 do not teach the claimed invention. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, with the film 806 in Figs. 3A-3C in AAPA being replaced by the two layer insulating structure of JP'060, the recited features of the claimed invention would be naturally included in the collectively taught device structure, including that the resulting total thickness of the combined insulation films and/or layers

in the peripheral area in the collectively taught device structure would be naturally greater than that in the image area, because: (A) the film 852 in peripheral area shown in Fig. 3C of AAPA is thicker than the film 802 in the imaging area shown in Fig. 3A of AAPA; and, (B) a portion of the insulating film (215) as taught in Figs. 2 and 3 of JP'060 is removed from the imaging area.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-

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1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH

April 14, 2005



SHOUXIANG HU
PRIMARY EXAMINER